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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,695	07/10/2000	Byung-in Ma	1293.1125/MDS	9690

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EXAMINER

YOUNG, WAYNE R

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/613,695

Applicant(s)

MA ET AL.

Examiner

W. R. Young

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. Applicant's election with traverse of the species of figures 3-4F in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the Examiner does not provide evidence of an undue burden, unreasonable number of species to be searched, why the invention is to be separated into Species, consistent with MPEP 803 and 808 why the Examiner is unduly burdened in comparison with the burden visited on the applicants in the extra delay and expense in obtaining protection for each Species, the factors set forth in MPEP 803, no burden out of proportion with the delay and expense, etc. etc. etc. This is not found persuasive because applicant has cited no authority related to "delay and expense of applicants" in relation to whether a Restriction should be made and as noted in MPEP § 803 and § 808.01(a), the fact that **applicants** have presented mutually exclusive **patentably distinct species** per se demonstrates a serious burden. The Examiner need not show different classification, status in the art, or field of search in contradistinction to a Restriction between distinct inventions where such must be shown. Hence, the justification for the election of species requirement is applicant's own disclosure that presents mutually exclusive **patentably distinct species** of the invention.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-16 and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Applicant concedes that claims 8-9 and 11 do not read on the elected species of figures 3-4F. Claim 8 reads on the species of figures 6-7, claim 9 reads on the species of figure 6, and claim 11 reads on the species of figures 6 or 7.

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Claims 1-7 do not read on the species of figures 3-4F, rather the species of figure 5. Claim 1 specifies binarizing each of the outputs of **more than 2** optical detectors positioned along a line **diagonal** to a track center. This does not read on the elected species. Further, claim 1 specifies phase locking to generate respective clock signals synchronized with each of the binarized outputs and detecting a phase difference between the synchronized clock signals. This also does not read on the elected species, which includes a matrix circuit 304 that provides combined signals to be binarized, phase locked, and phase differenced. Claim 1 reads on the species of figure 5. Similarly, claim 2 drawn to a corresponding apparatus reads on the species of figure 5, rather than the species of figures 3-4F. Claims 3-7 are dependent on claim 2.

Claims 10, 13-16, and 21 do not read on the species of figures 3-4F, rather the species of figures 5, 6, or 7. Claim 10 specifies a circuit that phase locks each of binarized signals from first and second optical detectors to output first and second clock signals synchronized with the first and second binarized signals and phase detector which compares a phase of the first and second synchronized clock signals. This also does not read on the elected species, which includes a matrix circuit 304 that provides combined signals to be binarized, phase locked, and phase differenced. Claims 13-16 and 21 are dependent on claim 10. Claim 12 is dependent on claim 10 and further only reads on the species of figure 5.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no disclosure of how to make and use the equalizers 306a, 306b in figure 3 and as claimed in claims 18-20. Applicant claims that the equalizers increase high frequency components, but does not explain or illustrate what high frequency components are increased. Applicant claims that the equalizers include a differentiator and that the differentiator operates on frequencies less than a value, but does not disclose nor illustrate the characteristics thereof nor explain or illustrate what frequencies are operated on. Page 7 of the specification refers to weak high frequency components, but lacks specifics about what are the frequencies in order for one of skill to make and use an appropriate equalizer. Page 7 of the specification refers to removing noise components, but lacks specifics about what are the noise components and what frequencies they are at in order for one of skill to make and use an appropriate equalizer. Page 7 provides no guidance as what or how the differentiators are implemented into the apparatus for one of skill to make and use the invention. What are the characteristics of this differentiator and where is an illustration of input and output signal characteristics thereof as used in the apparatus? Too much is left to conjecture and undue experimentation for one of ordinary skill to make and use the invention.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-302277.


Note the patent abstract, figures 1 and 13-14, and the electronic translation, page 3, top, page 10, bottom - page 11, for "plurality of optical detectors" 21, "matrix circuit" 22, "circuit which binarizes" 24, "circuit which performs a phase lock operation" 127, 161, 163, "phase detector" 127, 151-154, 27, "equalizers" (claims 18-20 and as best interpreted in light of the disclosure) 23.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure of phase detection of servo signals.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. R. Young whose telephone and VoiceMail number is (703) 308-1554. If a plurality of attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (703) 305-9687.

The appropriate fax phone number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700 or the Group Customer Service section whose telephone number is (703) 306-0377.

  
**WAYNE R. YOUNG**  
**PRIMARY EXAMINER**  
**ART UNIT 2652**

wry/wry  
12/5/03